

REMARKS

Upon entry of this Amendment, claims 35 - 45 remain in the application.

The Office Action of June 19, 2002, has been received and carefully considered. In response thereto, this Amendment is submitted. It is respectfully submitted that, by this Amendment, all bases of rejection and objection are traversed and overcome. Reconsideration is, therefore, respectfully requested.

Claims 35-42 currently stand rejected under 35 U.S.C. § 112, second paragraph as failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claims 35, and 42 have been amended paying special attention to the points observed by the Examiner. In view of these Amendments, it is respectfully submitted that Claims 35-42 now particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Claims 35-39 and 41-45 currently stand rejected under 35 U.S.C. §102(b). The Examiner indicates that the Maillard reference discloses that the recited multilayer tubing comprising a first layer 12 of an extrudable melt-processible thermoplastic material, and at least one additional layer 16 also made of an extrudable melt processible thermoplastic material which can contain substituted groups such as vinyl alcohols and alkenes such as ethylene, and where a third layer can be provided which can be made of a plastic chemically dissimilar to at least the first layer, of which polyamides can be used as at least one of the thermoplastic layers.

Claim 35 currently stands rejected under 35 U.S.C. §102(b). The Applicants' invention as set forth in claim 35 is directed to an elongated multi-layer tubing for connection to a motor vehicle system to contain and convey fluids containing hydrocarbons, the multi-layer tubing which includes a first layer disposed radially innermost. The first layer is composed of an extrudable melt processible thermoplastic and has an inner face capable of prolonged exposure to fluids containing hydrocarbons and an outer face spaced a predetermined thickness from the inner surface. The tubing also has at least one additional layer disposed radially

Inherent
properties
& intended
use of plastic

outward of the first layer and in overlying relationship thereto, said at least one additional layer composed of an extrudable melt-processible thermoplastic material and connected to the first layer in an essentially permanent manner. It is respectfully submitted that the Maillard reference fails to teach or suggest an automotive tubing that is resistant to hydrocarbon interaction and permeation and includes multiple layers which are bonded in an essentially permanent manner. Thus, it is respectfully submitted that the present invention as set forth in claim 35 is not taught, anticipated or rendered obvious by the Maillard reference.

Claims 36, 38, 39, and 41 currently stand rejected under 35 U.S.C. §102(b) as being anticipated by the Maillard reference. It is respectfully submitted that the Applicants' invention as set forth in claims 36 and 37 depend from independent claim 35 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 36, 38, 39, and 31 is not taught, anticipated or rendered obvious by the cited references for the reasons discussed previously in conjunction with claim 35. Furthermore, it is respectfully submitted that the Maillard reference outlines numerous materials which it suggests can be employed in the construct disclosed therein. Among these are polyvinyl alcohol or vinyl acetate. However, the reference fails to teach or suggest copolymers of substituted alkenes and vinyl alcohol, copolymers of unsubstituted alkenes and vinyl alcohol, copolymers of substituted alkenes and vinyl acetate, copolymers of unsubstituted alkenes and vinyl acetate, and mixtures thereof. Thus it is submitted that claim 36 and those claims depending therefrom are not taught, anticipated or rendered obvious by the cited reference.

Col 2
unsubstituted
considered
unsubstituted
Copolymers
recited
for most plastic

Inherent property
of material

Claim 37 currently stands rejected under 35 U.S.C. §102(b) as being anticipated by the Maillard reference. The Applicants' invention as set forth in claim 37 is directed to a multilayer tube for connection to a motor vehicle system to contain and convey fluids containing hydrocarbons in which the melt processible material employed in the additional layer is resistant to permeation by an interaction with short chain aromatic and aliphatic hydrocarbons. It is respectfully submitted that the cited reference fails to teach or suggest such material or a tubing construction which employs such material in the manner of the present invention.

Claim 42 currently stands rejected under 35 U.S.C. §102(b) as being anticipated by the Maillard reference. The Applicants' invention as set forth in claim 42 is directed to an elongated tubing capable conveying hydrocarbons, the tubing which includes a plurality of concentrically disposed polymeric layers with each concentrically disposed polymeric layer connected to at least one other concentrically disposed polymeric layer in an essentially permanent manner. The plurality of concentrically disposed polymeric layers include a first layer disposed radially innermost of the plurality of concentrically disposed polymeric layers and at least one additional layer disposed radially outward thereof and in essentially permanent contact therewith. At least one of these layers is composed of a melt-processible thermoplastic material selected from the group consisting of copolymers of substituted alkenes and vinyl alcohol, copolymers of unsubstituted alkenes and vinyl alcohol, copolymers of substituted alkenes and vinyl acetate, copolymers of unsubstituted alkenes and vinyl acetate, and mixtures thereof. Also included is at least one additional layer is composed of a thermoplastic material which is chemically dissimilar to said at least one of the plurality of concentrically disposed polymeric layers.

It is respectfully submitted that the Maillard reference fails to teach or suggest a tubing in which at least one layer is composed of a thermoplastic material selected from the group consisting of copolymers of substituted alkenes and vinyl alcohol, copolymers of unsubstituted alkenes and vinyl alcohol, copolymers of substituted alkenes and vinyl acetate, copolymers of unsubstituted alkenes and vinyl acetate, and mixtures thereof with at least one additional layer chemically dissimilar from the layers previously enumerated. Thus, it is submitted that the Applicants' invention as set forth in claim 42 is not taught, anticipated or rendered obvious by the Maillard reference.

Claims 43 and 45 currently stand rejected under 35 U.S.C. §102(b) as being anticipated by the Maillard reference. Claims 43 and 45 depend from independent claim 42 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 43

and 45 is not taught, anticipated or rendered obvious by the cited references for the reasons discussed previously in conjunction with claim 42.

Claim 44 currently stands rejected under 35 U.S.C. §102(b) as being anticipated by the Maillard reference. Claim 43 depends from independent claim 42 to specify that the thermoplastic material of the additional layer is selected from the group consisting of polybutylene terephthalate, polyethylene terephthalate, and mixtures thereof. It is respectfully submitted that the Maillard reference fails to teach or suggest these specific materials. Thus, it is submitted that the Applicants' invention as set forth in claim 44 is not taught, anticipated or rendered obvious by the cited reference. Furthermore, claim 44 depends from claim 43 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claim 43 is not taught, anticipated or rendered obvious by the cited references for the reasons discussed previously in conjunction with claim 42.

Claim 40 currently stands rejected under 35 U.S.C. §103(a) as being rendered obvious by the Maillard reference. The Examiner contends that the would have been obvious to vary the amounts of various components in the thermoplastic layer. With regard to the rejection of claim 40 in view of the Maillard reference, it is submitted that the Maillard reference is directed to a tube having multiple thermoplastic layers. This 1971 reference states:

The plastic materials which can be used for the manufacture of tubes of in accordance with the invention include *all extrudable plastic materials*, for instance, with without the following to be considered limitative:

Cellulose esters and ethers, for example, ethyl cellulose and cellulose acetate, acetobutyrate, and acetopropionate; vinyl and vinylidene polymers and co-polymers, for instance, polymers and co-polymers of vinyl chloride, vinyl acetate, vinylidene chloride, polyvinyl alcohol, polyvinyl butyral, polymers and co-polymers of acrylic and methacrylic esters; polymers and co-polymers olefins [sic.], such as ethylene and propylene, polymers and co-polymers of styrene, of alphanemethylstyrene and their mixtures or elastomeric co-polymers; polyamides, interpolyamides, such as polyhexamethylene, adipamide,

polyepsilon-caprolactam, polyundecanamide, polyhexamethylene-sebacamide; polycarbonates, polyethers, such as polyaldehydes, polyurethanes; natural and synthetic elastomers, thermoplastic fluorinated resins, silicone resins and elastomers. Preferably, polyolefins are used, in particular, polyethylenes and polyamides, especially polyundecanamides. (Maillard, column 2, lines 28-47, emphasis added).

It should be noted that the Maillard reference attempts to recite virtually every class and type of thermoplastic material. It is respectfully submitted that, in order to support the present rejection, the Maillard reference must be construed as placing the skilled artisan in possession of all classes and types of thermoplastics regardless of difficulties in processing, co-extrusion or the like. As advanced by the Patent Office, the Maillard reference stands for the premise that any thermoplastic can be used with any other thermoplastic in any possible layered combination to prepare a multi-layer, particularly one which will be suitable for use in a fuel and vapor system. It is respectfully submitted that the ultimate position advanced by the Patent Office is that the Maillard reference must be construed as placing the skilled artisan in possession of the teaching and skill to prepare multi-layer tubing constructions having each and every possible combination of each and every one of the thermoplastics listed in Column 2 of the Maillard reference and set forth above. This encompasses some 4×10^{26} different potential combinations.

It is respectfully submitted that the Maillard reference lacks sufficient information which would permit the skilled artisan to ascertain which among the multitude of combinations which may or may not function as an effective tube or even process together at all. For instance, the various materials enumerated have various processing parameters such as temperature, flow rate, etc. as well as characteristics which may or may not permit felicitous co-extrusion to form the desired multi-layer tubing. The cited references fail to teach or suggest any selection criteria which would guide the skilled artisan in selecting which of the numerous combinations may or may not work in a tubing construction. It is submitted that, when confronted with as vast a number of combinations as suggested in the Maillard

reference, the skilled artisan should not be required to guess among the materials which may or may not prove to be functional. Given the vast number of potential combinations encompassed by the above-quoted section from the Maillard reference, it is submitted that the reference, without more, is insufficient to one of ordinary skill in the art to suggest making the claimed combination.

In summary, claims 42 and 31 have been amended by this action. In view of the amendments and the foregoing discussion, it is respectfully submitted that the Applicants' invention as set forth in claims 35-45 is in a condition suitable for allowance. A Notice of Allowance is, therefore, respectfully requested.

Respectfully submitted,



Andrew R. Basile, Registration No. 24753
Attorney and Authorized Agent for Applicant

YOUNG & BASILE, P.C.
3001 W. Big Beaver Rd., Ste. 624
Troy, MI 48084-3107
Telephone: 248-649-3333
Facsimile: 248-649-3338
E-mail: basile@ybpc.com
Date: September 19, 2002
ARB/DMG/jfz

**VERSION OF AMENDMENTS WITH MARKINGS
TO SHOW CHANGES MADE**

In the claims:

35. (Amended) An elongated multi-layer tubing for connection to a motor vehicle system to contain and convey fluids containing hydrocarbons, the multi-layer tubing comprising:

a first layer disposed radially innermost the first layer having an inner face capable of prolonged exposure to fluids containing hydrocarbons and an outer face spaced a predetermined thickness from the inner surface[. The], the first layer composed of an [extrudable] extrudable melt-processible thermoplastic material; and

at least one additional layer disposed radially outward of the first layer and in overlying relationship thereto, said at least one additional layer composed of an extrudable melt-processible thermoplastic material and connected to the first layer in an essentially permanent manner.

42. (Amended) An elongated tubing capable conveying hydrocarbons, the tubing comprising:

a plurality of concentrically disposed polymeric layers, each concentrically disposed polymeric layer connected to at least one other concentrically disposed polymeric layer in an essentially permanent manner, each concentrically disposed polymeric layer composed of an extrudable, melt-processible thermoplastic material[.],

wherein the plurality of concentrically disposed polymeric layers include a first layer disposed radially innermost of the plurality of concentrically disposed polymeric layers and at least one additional layer disposed radially outward thereof and in essentially permanent contact therewith[.],

wherein at least one of the plurality of concentrically disposed polymeric layers contains a melt-processible thermoplastic material selected from the group consisting of copolymers of substituted alkenes and vinyl alcohol, copolymers of unsubstituted alkenes and vinyl alcohol, copolymers of substituted alkenes and

vinyl acetate, copolymers of unsubstituted alkenes and vinyl acetate, and mixtures thereof, and wherein

at least one additional layer of the plurality is composed of a thermoplastic material which is chemically dissimilar to said at least one of the plurality of concentrically disposed polymeric layers.